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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/909,562	07/20/2001	Yakov Tokar	SC0361WI	2577

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AUSTIN INTELLECTUAL PROPERTY
LAW SECTION
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EXAMINER
MOAZZAMI, NASSER G

ART UNIT	PAPER NUMBER
2187	

DATE MAILED: 03/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/909,562	Applicant(s) Tokar et al.
	Examiner Nasser Moazzami	Art Unit 2187

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *Three* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *Jan 21, 2003* .

2a) ☒ This action is **FINAL.** 2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under ***Ex parte Quayle***, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-14* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
4) ☐ Interview Summary (PTO-413) Paper No(s). _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Response to Amendment

1. This Office Action is in response to applicant's amendment dated 01/21/2003 in response to PTO Office Action dated 10/18/02. The applicant's remarks and amendment were considered with the results that follow.

2. Claims 1-14 have been presented in this application for examination. No claims have been canceled and no new claims have been added. Therefore, claims 1-14 remain pending in the application.

3. Objection to the specification is withdrawn due to the correction by the applicant.

4. Objections to the claims 3-5 and 8-14 under minor informalities are withdrawn due to the correction by the applicant.

Response to Arguments

5. Applicant's arguments filed 01/21/2003 have been fully considered but they are not persuasive.

In response to applicant's arguments, examiner refer the applicant to the following:

Ngu discloses a system and method for managing a buffer. Ng discloses an initial request to access a desired data which is going to be presented to the buffer memory (cache) first and if it misses the cache, it will be presented to the slower memory to be retrieved and to be store in the cache and to be sent to the processor. While it is retrieving the requested data, it will prefetch additional data consecutive to the initial data to be stored in the cache for future use. If another request (second or third) request is initiated while the data is being prefetched, based on whether the another request is part of addresses that is being prefetched or not, the prefetching either is going to be interrupted or continue.

Applicant's arguments in regard to the pointers in the newly claimed language is supported by the Ngu's patent, since the patent teaches that a data access request includes a request

address (first pointer, because the address is pointing to a specific place in the memory), if the data access request does not hit the buffer, it will fetch the required data from the external memory and along with the fetch address, it will prefetch some additional data (the prefetch address is the second pointer). If another data access request comes in when the prefetch is in progress, the address associated with the new data access request is compared with the addresses in the buffer and if it misses the buffer, it will be checked against the prefetching range in progress to see if the second data access request address is expected to arrive in buffer memory, if not, the prefetching is halted and the second data access request is carried out. After completion of the second data access request it continues the prefetching (the third pointer, point of restarting the prefetch). For further detail in this regard, please see column 7, line 41 bridging column 8, line 43; also see figure 3B.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Ng (U.S. Patent No. 5,623,608).

As for claim 1, Ng teaches a method for filling a line in a cache, comprising the steps of: sending a request for data to be provided on a data bus to the cache at a first address ***[the purpose of the cache in every computer system is to increase access speed to the data, so initial read request from the processor first goes to the cache (column 1, lines 21-25, and lines 36-37; column 5, lines 58-60; column 8, lines 29-30; and see step 64 of figure 3B)];*** sending a first request external to the cache for first data at the first address ***[if there is a cache miss, the request will be provided to the slower memory such as slow RAM, DASD or Optical disk (see figure 1; and step 90 of figure 3B)];*** defining a first pointer for the first address ***[the address of the first data access request];*** sending for additional data at additional addresses, the additional addresses being consecutive with the first address ***[after completion of the***

fetch operation, the data store continues to read in consecutive order sufficient additional subsequent data blocks to fill the active buffer memory segment (column 1, lines 51-54)]; defining a second pointer for the address of the data that was last sent for ***[the prefetching address rang];*** receiving the first data located at the first address and placing the first data in the line in the cache and onto the data bus ; loading the additional data into the line in the cache as it is received ***[the data store first fetches the requested data blocks and stores it in the buffer memory; the external processor receives data blocks on the bus in response to the same data access request; a requested data block is stored and subsequent prefetched data blocks are written in consecutive order to the segment in the buffer memory (column 1, lines 49-51; column 5, lines 58-61; and column 6, lines 7-11)];*** defining a third pointer for the address of the data that was last received ***[the last address before halting prefetching];*** terminating the loading of the additional data in response to a second request for different data that is at a different address from the additional addresses; and sending the second request external to the cache for the different data at the different address ***[if the data access request is not in the buffer memory***

and is not in the prefetching range, immediately halting the present prefetching access to initiate the new fetching access (column 8, lines 28-43; also see figures 3A and 3B)].

As for claim 2, Ng teaches continuing loading the additional data into the line in the cache as it is received in response to receiving a data request at one of the additional addresses for data not present in the cache ***[if the data access request finds that the requested data block is not in the buffer memory, but it is in the prefecthing access in progress, waiting for completion of the present prefetching (column 8, lines 28-35; also see figures 3A and 3B)].***

As for claims 3-5, Ng teaches a method for operating a processing system comprising a cache and a processor ***[buffer memory and processor (see column 1, lines 23-24 and figure 1)],*** claims 3-5 encompass the same scope of the invention as those of the claims 1, and 2. Therefore claims 3-5 are rejected for the same reasons as stated above in regard to claims 1, and 2.

As for claims 6-9, Ng discloses a processing system ***[system 10 (see figure 1)]*** with a number of units for performing the step functions of the method claims 1, and 2, wherein the cache is characterized as having a plurality of lines that each comprise locations having consecutive addresses ***[buffer memory 26 organized as a plurality of memory segments, each segment provides for contiguous storage of 32 data blocks (column 5, lines 62-67; also see figure 2)]***. Therefore claims 6-9 encompass the same scope of the invention as those of the claims 1, and 2 and are rejected for the same reasons as stated above with respect to claims 1, and 2.

As for claims 10-14, Ng discloses a processing system ***[system 10 (see figure 1)]*** with a number of units for performing the step functions of the method claims 1, and 2, wherein the cache is characterized as having a plurality of lines that each comprise locations having consecutive addresses ***[buffer memory 26 organized as a plurality of memory segments, each segment provides for contiguous storage of 32 data blocks (column 5, lines 62-67; also see figure 2)]***, and providing a hit signal if a request for data is contained in the cache and a miss signal if

the request for data is not contained in the cache ***[buffer hit and buffer miss (column 1, lines 56-61; and column 8, lines 28-36; also see figure 3B step 64)]*** . Therefore claims 6-9 encompass the same scope of the invention as those of the claims 1, and 2 and are rejected for the same reasons as stated above with respect to claims 1, and 2.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE MONTHS shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. When responding to the office action, applicant are requested to provide examiner with the line numbers and page numbers in the application and/or references cited to assist examiner to locate the appropriate paragraphs.

Any response to this action should be mailed to:

Commission of Patent and Trademarks

Washington, D.C. 20231

10. Any inquiry concerning this communication from the examiner should be directed to Nasser Moazzami whose telephone number is (703) 305-0017 from 8:00am-5:30pm on Monday-Friday or to the examiner's supervisor, Do Yoo who can be reached at (703)308-4908 on Monday-Friday from 8:00am-4:30pm EST.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the group receptionist whose telephone number is (703)305-3900.

The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7238 for After Final communication.

11. A shortened statutory period for response to this action is set to expire 3 (three) months from the date of this letter. Failure to respond within the period for response will cause the application to become abandoned (see MPEP 710.02 (b)).

Nasser Moazzami
N.M.
Examiner

03/05/2003

DO HYUN YOO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100